

# Advanced Nano-Bio Materials for Energy Lab

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## 주요 연구

### **NANOMATERIALS DESIGN FOR LITHIUM ION BATTERIES (LIB)**

- Next generation high power cathodes
- Nanostructured anodes
- Hybrid Electrode Materials based on 2-dimensional graphene templates
- Nanostructured electrodes using biological templates

### **POROUS CARBON BASED MATERIAL DESIGN FOR LITHIUM-AIR BATTERIES**

- 3-dimensional porous carbon air-breathing electrodes
- Catalyst loaded hierarchical hybrid electrode based on porous graphene

### **BIO-INSPIRED NANOCHANNELS**

- Novel ion selective mechanism using bio-functional molecules
- High efficiency ion selective nanochannels
- Mimicking electric eels: Blue energy harvesting using ion selective channel
- Graphene-based ion selective membranes
- Aquaporin inspired water channel for water treatment and energy harvesting